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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,486	12/27/2005	Haruo Sugiyama	283629US0PCT	6317

22850 7590 04/21/2011

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EXAMINER	
SCHWADRON, RONALD B	
ART UNIT	PAPER NUMBER
1644	

NOTIFICATION DATE	DELIVERY MODE
04/21/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/562,486	SUGIYAMA, HARUO	
	Examiner	Art Unit	
	Ron Schwadron, Ph.D.	1644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-9,11-16 and 63-70* is/are pending in the application.

4a) Of the above claim(s) *63-70* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-9,11-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/4/10 and 7/2/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. Claims 63-70 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species (as per the previously enunciated restriction requirements), there being no allowable generic or linking claim.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1,4-9,11-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite in the recitation of “originated from human WT1” because said phrase is not defined in the specification and has no art recognized meaning. Claim 1 is indefinite in the recitation of “exerts HLA-restricted CTL activity” because said phrase is not defined in the specification and has no art recognized meaning.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1,4-6,8,9,11-14,16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification does not provide adequate written description of the claimed invention. The legal standard for sufficiency of a patent's (or a specification's) written description is whether that description "reasonably conveys to the artisan that the inventor had possession at that time of the. . .claimed subject matter", Vas-Cath, Inc. V. Mahurkar, 19 U.S.P.Q.2d 1111 (Fed. Cir. 1991). In the instant case, the specification does not convey to the artisan that the applicant had possession at the time of invention

of the claimed inventions.

The instant claims encompass use of mutant and variant peptides (see specification, page 23, first paragraph) wherein the identity of said peptides is not disclosed in the specification and the amino acid sequence of such mutant/variants is unpredictable. With the exception of the specific WT1 peptides disclosed in the specification, the skilled artisan cannot envision the detailed structure of the encompassed mutants and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. In the instant application, the amino acid itself or isolated protein is required. See Fiers v. Revel, 25 USPQ 2d 1601 at 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Lts., 18 USPQ2d 1016. In view of the aforementioned problems regarding description of the claimed invention, the specification does not provide an adequate written description of the invention claimed herein. See The Regents of the University of California v. Eli Lilly and Company, 43 USPQ2d 1398, 1404-7 (Fed. Cir. 1997). In University of California v. Eli Lilly and Co., 39 U.S.P.Q.2d 1225 (Fed. Cir. 1995) the inventors claimed a genus of DNA species encoding insulin in different vertebrates or mammals, but had only described a single species of cDNA which encoded rat insulin. The court held that only the nucleic acids species described in the specification(i.e. nucleic acids encoding rat insulin) met the description requirement and that the inventors were not entitled to a claim encompassing a genus of nucleic acids encoding insulin from other vertebrates, mammals or humans, id. at 1240. The Federal Circuit has held that if an inventor is "unable to envision the detailed constitution of a gene so as to distinguish it from other materials. . .conception has not been achieved until reduction to practice has occurred", Amgen, Inc. v. Chugai Pharmaceutical Co, Ltd., 18 U.S.P.Q.2d 016 (Fed. Cir. 1991). Attention is also directed to the decision of The Regents of the University of California v. Eli Lilly and Company (CAFC, July 1997) wherein is stated: "The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See In re Wilder, 736 F.2d 1516, 222 USPQ 369, 372-373 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention

will hopefully ameliorate."). Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material. Thus, as we have previously held, a cDNA is not defined or described by the mere name "cDNA," even if accompanied by the name of the protein that it encodes, but requires a kind of specificity usually achieved by means of the recitation of the sequence of nucleotides that make up the cDNA." See Fiers, 984 F.2d at 1171, 25 USPQ2d at 1606.

Regarding applicants comments, the claims under consideration are not limited to the use of SEQ. ID. No. 2. Furthermore, the term “originated from human WT1” has no art recognized meaning and is not defined in the specification. For the purposes of this rejection said term will be interpreted as including use of mutant and variant peptides. The instant claims encompass use of mutant and variant peptides (see specification, page 23, first paragraph) wherein the identity of said peptides is not disclosed in the specification and the amino acid sequence of such mutant/variants is unpredictable. With the exception of the specific WT1 peptides disclosed in the specification, the skilled artisan cannot envision the detailed structure of the encompassed mutants and therefore conception is not achieved until reduction to practice has occurred, regardless of the complexity or simplicity of the method of isolation. Adequate written description requires more than a mere statement that it is part of the invention and a reference to a potential method of isolating it. In the instant application, the amino acid itself or isolated protein is required. See Fiers v. Revel, 25 USPQ 2d 1601 at 1606 (CAFC 1993) and Amgen Inc. V. Chugai Pharmaceutical Co. Lts., 18 USPQ2d 1016. In view of the aforementioned problems regarding description of the claimed invention, the specification does not provide an adequate written description of the invention claimed herein. See The Regents of the University of California v. Eli Lilly and Company, 43 USPQ2d 1398, 1404-7 (Fed. Cir. 1997). In University of California v. Eli Lilly and Co., 39 U.S.P.Q.2d 1225 (Fed. Cir. 1995) the inventors claimed a genus of DNA species encoding insulin in different vertebrates or mammals, but had only described a single species of cDNA which encoded rat insulin. The court held that only the nucleic acids species described in the specification(i.e. nucleic acids encoding rat insulin) met the description requirement and that the inventors were not entitled to a claim encompassing a genus of nucleic acids encoding insulin from other vertebrates, mammals or humans, id. at 1240. The Federal Circuit has held that if an inventor is

"unable to envision the detailed constitution of a gene so as to distinguish it from other materials. . .conception has not been achieved until reduction to practice has occurred", Amgen, Inc. v. Chugai Pharmaceutical Co, Ltd., 18 U.S.P.Q.2d 016 (Fed. Cir. 1991). Attention is also directed to the decision of The Regents of the University of California v. Eli Lilly and Company (CAFC, July 1997) wherein is stated: "The description requirement of the patent statute requires a description of an invention, not an indication of a result that one might achieve if one made that invention. See In re Wilder, 736 F.2d 1516, 222 USPQ 369, 372-373 (Fed. Cir. 1984) (affirming rejection because the specification does "little more than outlin[e] goals appellants hope the claimed invention achieves and the problems the invention will hopefully ameliorate."). Accordingly, naming a type of material generally known to exist, in the absence of knowledge as to what that material consists of, is not a description of that material. Thus, as we have previously held, a cDNA is not defined or described by the mere name "cDNA," even if accompanied by the name of the protein that it encodes, but requires a kind of specificity usually achieved by means of the recitation of the sequence of nucleotides that make up the cDNA." See Fiers, 984 F.2d at 1171, 25 USPQ2d at 1606.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1,4-9,11,12,16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNeill et al. (WO 02/28414) in view of Altman et al.

McNeill et al. teach assays for the detection in cancer patients of T cells that respond to WT1 peptides including CTL (see pages 5,6 47,51-52).McNeill et al. teach use of such techniques for monitoring the effectiveness of immunization/therapy in said patients (see pages 5,6 47,51-52) wherein the immunization refers to immunization with WT1 peptides (see page 36). McNeill et al. teach that patients that display a higher T cell response are expected to show a greater response to therapy (see page 47, last sentence). McNeill et al. disclose that one of the peptides used in said method is that of

SEQ ID NO:2 (see page 2, last paragraph continued on next page). McNeill et al. do not specifically teach the method steps of claim 1 using the assay of claim 1, step (b) or use of the HLA tetramer method. In view of the teachings of McNeill et al. that patients that display a higher T cell response are expected to show a greater response to therapy, a routineer would have screened for such patients using art known techniques and wherein a baseline response (aka from normals) would be required to differentiate higher from normal responders. Altman et al. teach a convenient assay for the identification of antigen specific T lymphocytes wherein CTL precursors effectors are measured using a "HLA tetramer method" (see abstract, pages 94-96). McNeill et al. disclose that T cell responses are measured using biological samples from the test subject (see page 51, last paragraph). The assay of Altman et al. uses the method of claim 5/6 wherein the tetramer contains HLA-A2 antigen (see Figure 1). The HLA tetramer would be matched to the HLA of the tested patient. HLA tetramer/WT1 peptide complex binding to T cells would be measured using flow cytometry as per the method of Altman et al. (see Figure 1). A routineer would empirically determine the desired response that constituted a "higher frequency". The CTL precursors are effector cells (see page 95). It would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made to have created the claimed invention because McNeill et al. teach assays for the detection in cancer patients of T cells that respond to WT1 peptides and use of such techniques for monitoring the effectiveness of immunization/therapy in said patients and that patients that display a higher T cell response are expected to show a greater response to therapy wherein a routineer would have screened for such patients using art known techniques and wherein a baseline response (aka from normals) would be required to differentiate higher from normal responders whilst Altman et al. teach a convenient assay for the identification of antigen specific T lymphocytes wherein CTL precursors are measured using a "HLA tetramer method". One of ordinary skill in the art would have been motivated to do the aforementioned because McNeill et al. teach assays for the detection in cancer patients of T cells that respond to WT1 peptides and use of such techniques for monitoring the effectiveness of immunization/therapy in said patients and that patients that display a higher T cell response are expected to show a greater response to therapy whilst

Altman et al. teach a convenient assay for the identification of antigen specific T lymphocytes wherein CTL precursors are measured using a "HLA tetramer method".\

Regarding applicants comments, McNeil et al., page 47 teaches:

"In particular, patients that display a higher antibody, proliferative and/or lytic response may be expected to show a greater response to therapy.".

McNeill et al. do not specifically teach the method steps of claim 1 using the assay of claim 1, step (b) or use of the HLA tetramer method. In view of the teachings of McNeill et al. that patients that display a higher T cell response are expected to show a greater response to therapy, a routineer would have screened for such patients using art known techniques and wherein a baseline response (aka from normals) would be required to differentiate higher from normal responders. Altman et al. teach a convenient assay for the identification of antigen specific T lymphocytes wherein CTL precursors effectors are measured using a "HLA tetramer method" (see abstract, pages 94-96). McNeill et al. disclose that T cell responses are measured using biological samples from the test subject (see page 51, last paragraph). The assay of Altman et al. uses the method of claim 5/6 wherein the tetramer contains HLA-A2 antigen (see Figure 1). The HLA tetramer would be matched to the HLA of the tested patient. HLA tetramer/WT1 peptide complex binding to T cells would be measured using flow cytometry as per the method of Altman et al. (see Figure 1). A routineer would empirically determine the desired response that constituted a "higher frequency". The CTL precursors are effector cells (see page 95).

Regarding the particular passage from the specification to which applicant refers, in view of the aforementioned disclosures, it appears that said statement is not an accurate assessment of the state of the art at the time the invention was made.

8. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNeill et al. (WO 02/28414) in view of Altman et al. as applied to claims 1,4-9,11,12,16 above, and further in view of Nagai et al.

The previous rejection renders obvious the claimed method except for use of the markers recited in claim 13. Nagai et al. teach that effector T cells are CD8+/CD45RA+/CD27- (see page 197, second column last paragraph) Said cells are identified using antibodies against said markers. It would have been prima facie obvious

to one of ordinary skill in the art at the time the invention was made to have created the claimed invention because the previous rejection renders obvious the claimed method except for use of the markers recited in claim 13 whilst Nagai et al. teach that effector T cells are CD8+/CD45RA+/CD27- wherein a routineer would have used said markers to further characterize the cells identified in the method of Altman et al. (for example as per Figure 1). One of ordinary skill in the art would have been motivated to do the aforementioned to identify effector T cells in the responding cells identified by the method of Figure 1 because said cells mediate T cell effector function.

Applicants arguments are as per addressed above.

9. No claim is allowed.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ron Schwadron, Ph.D. whose telephone number is 571 272-0851. The examiner can normally be reached on Monday-Thursday 7:30-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on 571 272-0841. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ron Schwadron/
Ron Schwadron, Ph.D.
Primary Examiner, Art Unit 1644